Importance of Preconception and Preventative Care: Women and the Affordable Care Act

MPP Professional Paper

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In the past, policy changes have been made to ensure insurance covers pregnant women. Public programs such as Medicaid were expanded to cover pregnant women. However, there has not been much focus on expanding health insurance coverage for non-pregnant, reproductive age women. Even though these women can obtain coverage during pregnancy, this is too late of an intervention to ensure women have healthy pregnancies (Atrash et al., 2006, pg.4). Women who are not pregnant nor have children are more likely to be uninsured (Johnson and Gee, 2012, pg. 225). Childbearing age women suffer from a variety of chronic conditions that could potentially contribute to adverse pregnancy outcomes (Atrash et al., 2006, pg.4). Preventative measures need to happen before pregnancy to detect, modify, and control risk factors that contribute to maternal and infant outcomes (Atrash et al., 2006, pg.4). Young adults between the ages of 19 to 24 are more likely to be uninsured and are among the most likely to be pregnant (Johnson and Gee, 2012, pg.225). Recent policy changes were implemented to expand access health care coverage under the Affordable Care Act (ACA). Due to this policy change, I am interested to see if the ACA expanded coverage for non-pregnant women. Studying the ACA expansion would be helpful to understand which provisions had a positive impact on women's health care coverage.

My paper will focus on how the ACA has affected trends in health insurance coverage among pregnant and reproductive-age women. I will also consider social factors such as age, race, education, and geographical location to examine their influence on recent trends in health insurance coverage. By using these socio-demographic factors in my analysis, I can better understand how each factor affects the status of insurance coverage.

Access to health care is important for reproductive-age women's preconception and prenatal care. After the enactment of the ACA, there were important preventative and prenatal health care services that all marketplace plans and many other plans must cover for women without copay or coinsurance (Healthcare, 2017). These services are only free when delivered by a doctor or provider within the plan's network. Services such as cervical cancer screening and breastfeeding, comprehensive support, and counseling are among the benefits that reproductive-age women should access (Healthcare, 2017). However, this can be difficult when women have no health insurance. A recent study done by Kozhimannil et al. (2012) found that among women living in the United States who were not pregnant 19% were uninsured and 25% of them were uninsured at some point in the prior year (pg. 135). While ten percent of pregnant women reported being currently uninsured, and 27% and 58% covered by Medicaid and private insurance, respectively (Kozhimannil et al., 2012, pg.135). Studying coverage status between non-pregnant, reproductive age women and pregnant women allows healthcare providers and policymakers to explore differences among the two groups further.

Social Determinants of Health

The term 'social determinants of health' refers to any social condition that affects health. The World Health Organization, for example, defines social determinants as the 'societal conditions in which people are born, grow, live, work and age' (WHO 2011:1; Commission on the Social Determinants of Health, 2008). For this reason, I will be using various demographic characteristics as controls since they have been associated with health access and coverage (Kozhimannil et al., 2012, pg. 136).

Racial and Ethnic Minorities

Low-income women, those who belong to racial and ethnic minority groups, and women with unintended pregnancies are at higher risk of adverse maternal and birth outcomes (Ayoola et al., 2016, pg.294). In the past, racial and ethnic minorities faced systematic segregation and exclusion. Takeuchi et al. (2010) argue that there is an important role played by segregation as a social process. It contributes to differential exposure to many particular environments and contexts and these different opportunity structures, and community structures may influence health by shaping social processes (Takeuchi et al., 2010, pg. 92).

Racial and ethnic disparities in health care exist even when insurance status, income, age, and severity of conditions are comparable (Nelson, 2002, pg.666). Death rates from cancer, heart disease, and diabetes are significantly higher in racial and ethnic minorities than in whites (Nelson, 2002, pg.666). In a 2012 study on breast cancer, DeSantis (2016) found that more black women (42%) die from breast cancer compared to whites. Blacks are more likely to report low levels of trust in health care providers and have fewer quality visits (Halbert et al., 2006, pg.896). Minorities perception of the health system can be useful to understanding the disparities in health outcomes.

Ethnic minorities are much more likely than non-Latino whites to be uninsured. Over one-third of Latinos (37%) are uninsured, the highest rate among all ethnic groups and two and a half times the rate of 14% for non-Latino whites (Brown et al., 2000, pg.9). Nearly one-fourth of African Americans, and about one-fifth of Asian Americans and Pacific Islanders and American Indians/Alaskan Natives (AIAN) are uninsured

(Brown et al., 2000, pg.10). The higher uninsured rate of ethnic minorities is attributable in large part to their lower rates of job-based insurance. For instance 73% of whites, but only 43% of Latinos, 51% of AIAN, 53% of African Americans and 64% AAPIs are covered by job-based insurance (Brown et al., 2000, pg.10).

Latino and Asian American and Pacific Islander (AAPI) adults are more likely to not have a usual source of care (Brown et al., 2000, pg.8). Health insurance coverage increases the likelihood that an individual will have a usual source of care and receive physician services. However, Latinos experience the highest uninsured rates of all ethnic groups. Nearly four out of ten nonelderly Latinos are uninsured (Brown et al., 2000, pg.8). Their high uninsurance rate is due to lack of employment-based health insurance.

Moreover, a population that is overlooked are undocumented immigrants who give birth in the United States. Passell and Taylor (2010) reported that unauthorized immigrants represent about 4% of the U.S. population, but their newborns represented 8% of all births during the period March 2009 to March 2010 (pg.12). This is because they are relatively young and thus make up a higher percentage of the births. Hence, citizen status is an important factor to consider when reviewing health care insurance among women living in the United States.

Furthermore, within the AAPI sub-population, there are differences in health care coverage. Koreans, Chinese, and Japanese are more likely than Southeast Asians to have health insurance coverage (Brown et al., 2000, pg.9). Southeast Asians are more likely to experience high levels of poverty and a high proportion of refugees; thus, they were more likely to be on Medicaid coverage (Brown et al., 2000, pg.9). As for AI/ANs,

they are disadvantaged by low family incomes. Half the nonelderly AI/ANs have family incomes below 200% of the federal poverty level, twice the rate for whites (Brown et al., 2000, pg.10). Moreover, among adults, death rates for African Americans are approximately 55% higher than for whites (Brown et al., 2000, pg.11). Diabetes kills African Americans more than three times the rate for whites, and kills AIANs at more than twice the rate, and Hispanics at more than one and a half time the rate for whites (Brown et al., 2000, pg.11). African-American infant mortality rates are more than double those of whites (14% vs. 6%), while Native American infant mortality rates (10%) are more than one and a half times those of whites (Brown et al., 2000, pg.11). Racial and ethnic minorities experience structural obstacles and treatment in healthcare services that can lead to mistrust and disparities.

Education and Health Insurance Coverage

Education contributes to an array of resources that are salutary to health, including cognitive and problem-solving skills, personal sense of control, healthy lifestyles, and more lucrative and health-sustaining occupations (Sudano and Baker, 2006, pg.910). Research-based evidence has identified educational status as a major predictor of health outcomes, and economic trends in the industrialized world have intensified the relationship between education and health (Zimmerman and Woolf, 2015, pg.1). In the United States, there is a large gap between the health of those with low education and high education levels (Goldman and Smith, 2011; Olshansky et al., 2012) in all regions of the United States (Montez and Berkman, 2014).

Among white Americans without a high school diploma, especially women, life expectancy has decreased since the 1990s, whereas it has increased for others

(Olshansky et al., 2012, pg.1803). Death rates are declining among the most educated Americans, accompanied by steady or increasing death rates among the least educated (Jemal et al., 2008, pg. 2181). Individuals with higher education have advantages in gaining employment and finding desirable jobs. Advanced degrees give workers an advantage in obtaining rewarding jobs that offer not only higher salaries and job satisfaction but other health-related benefits (Zimmerman and Woolf, 2005, pg.10). For example, these jobs have health insurance coverage, three worksite health promotion programs, and worksite policies that protect occupational safety (Zimmermann and Woolf, 2005, pg.11).

Individuals who lack an adequate education increases the risk of unemployment. People with low income are more likely to be uninsured and to be vulnerable to the rising costs of healthcare (Zimmermann and Woolf, 2005, pg.12). People with a higher income have more resources to partake in a healthy lifestyle. This ranges from the ability to purchase healthy foods, to afford the time and expenses associated with regular physical activity, and to afford health care expenses (Zimmermann and Woolf, 2005, pg.12). Costs of a healthy lifestyle pose a barrier for people with less education. The health implications of these financial barriers to health care are well documented: the uninsured are less likely to receive preventive care or help with disease management, and they have a higher risk of death (Zimmermann and Woolf, 2005, pg.26).

Socioeconomic Status

In the United States, the lower socioeconomic position is associated with lower, overall health care use, even among those with health in insurance (Braveman et al.

2010, pg.186). Socioeconomic position measured by education or income is also related to a standard measure of health care quality. The lower socioeconomic position leads to receiving fewer Papanicolaou test, mammograms, childhood, and influenza immunizations, later enrollment in prenatal care (Braveman et al., 2010, pg.186).

Sudano and Baker (2006) conducted a study on racial and ethnic disparities in health declines and mortality. They used socioeconomic status as a measure of health behavior and health insurance coverage. There were large and significant differences between the racial/ethnic groups in SES and insurance status. Blacks and Hispanics were more socioeconomically disadvantaged compared to Whites in each of the SES-component variables (Sudano and Baker, 2006, pg.919). Whites were somewhat more likely than blacks and Hispanics to be insured at all three interviews (82.3%, 71.7%, and 67.3%, respectively). The higher socioeconomic status allows individuals to partake in a more healthy lifestyle and gain access to services that improve their health.

Gendered Healthcare System

There is a reason to focus on women as a group, an analysis from the Kaiser Family Foundation, found that more women report fair to poor health (Rosenbaum, 2008, pg.27). Women also experience a wage and income gap that persists over their lifetimes, and that elevates the potential for health-related access problems (Rosenbaum, 2008, pg.28). Glied et al. (2012) studied women's health coverage from 1980 to 2005, found that women's health insurance coverage declined over the last two decades (pg.14). This was due to a decline in private coverage following socioeconomic circumstances. Experts primarily focus on women's experience through the health care system, noting that the system is highly gendered thus men and women are impacted

differently (Rosenbaum, 2008, pg.28). In a study by Bertakis et al. (2000), they studied women's experience in the healthcare system. Women had significantly lower self-reported health status and lower mean education and income than men (Bertakis et al., 2000, pg.149). After controlling for health status, sociodemographic, and clinic assignment, women still had higher medical charges for all categories of charges except hospitalizations (Bertakis et al., 2000, pg.149). In addition, women's symptoms to diseases and response to drugs differ. Women are more likely to have difficulty breathing or other atypical symptoms of myocardial infarction and are less likely than men to report chest discomfort (Legato et al., 2016, pg.1866). Furthermore, many medications are metabolized differently in women than men due to variances in body size and distribution volumes, and sex hormone levels (Legato et al., 2016, pg.1866). For example, propranolol levels may be up to 80% higher in women, so dosage has to be adjusted to avoid adverse effects (Legato et al., 2016, pg.1865). However, women have been excluded from these clinical trials that tested drugs.

History of Women's Health Insurance Coverage

During the 1980s, federal legislation was enacted to markedly expand eligibility for maternity care coverage under the Medicaid program (Egerter et al., 2002; Howell, 2001). In 1986, the average Medicaid eligibility income threshold for maternity care was approximately 55% of the federal poverty level (Egerter et al., 2002; Howell, 2001). By 1990, pregnant women with incomes up to 133% of the federal poverty level were eligible for Medicaid coverage in all states (Egerter et al., 2002, pg. 423). The eligibility expansions also addressed past obstacles such as prenatal care sites, streamlining application and certification procedures, and making Medicaid participation more

attractive to obstetric providers (Howell, 2001, pg.4). Health insurance helps provide resources for pregnant women who may need financial assistance. Hence, policies that expanded Medicaid eligibility for maternity care coverage were rooted in the idea that decreasing the number of uninsured pregnant women would lead to improved access to prenatal care.

In the past decade, there has been a rise in rates of uninsurance and a decline in private health insurance and employer-sponsored coverage among reproductive-age women (Kozhimannil et al., 2012; Kaiser Family Foundation and Health Research and Educational Trust, 2010). Surveys conducted by the Kaiser Family Foundation found that more people gained insurance through government plans. Past studies of trends in health insurance among American women have shown an increased rate of uninsurance, growing from growing from 11.7% in 1980 to 18.2% in 2005 among women ages 25 to 64 (Glied et al., 2008, pg. 7). Lack of health insurance can be a barrier to accessing appropriate care for pregnant and childbearing women. By not having access to certain healthcare services, this can lead to delays, forgone care, and poor health outcomes (Howell, 2011; Oberg et al., 2010). Hence, being insured especially during pregnancy is not only beneficial for the mother but promotes the well-being of her fetus.

In Johnson et al. (2015) study of Medicaid from 1980 to 2005, they found that Medicaid expansion allowed pregnant women to access care that was not available to them before (pg.339). Before the 1980's, Medicaid was limited to poor women and children. After the expansion, among the 8 million of U.S. births, late initiation of prenatal care decreased for both white and African American women with low incomes

(Johnson et al., 2015, pg. 339). Furthermore, there have been many studies that have analyzed whether Medicaid reduced the low birth weight. Although the studies are not conclusive, the expansion the level of knowledge for prenatal care and pregnancy increased among low-income, high-risk, minority women (Johnson et al., 2015, pg.340). Medicaid expansion is not only important for pregnant women, even before a woman conceives the child, but her health is also important to the well-being of the child.

Health care coverage allows women to gain access to reproductive services such as contraceptives and testing for sexually transmitted infections. The health care system in the US has created barriers to care for less affluent women (Zimmerman and Legerski, 2010, pg. 90). Women tend to pay higher premiums than men and are often unable to get coverage that includes maternity care (Zimmerman and Legerski, 2010, pg.90). In addition, women aged 18–64 at highest risk for being uninsured include those who are low income, without high school completion, Hispanic, foreign-born, Native American or Alaskan Native, young, or single parents (Johnson, 2012, pg.225). Women who are neither pregnant nor raising children are particularly likely to be uninsured (Johnson, 2012, pg.225). Moreover, health insurance coverage during pregnancy can help facilitate access to health care and allow for the identification and treatment of health-related issues (MMWR, 2016, pg.2). Continuous access to health insurance and health care for women of reproductive age can improve maternal and infant health by early identification and management of conditions that are present before and between pregnancies (MMWR, 2016, pg.2).

Kozhimannil et al.'s (2012) research analyzed trends for pregnant and non-pregnant, reproductive age women. The study focused on characterized changes in

health insurance coverage among pregnant and reproductive age women, between 2000 - 2009. In their study, they used descriptive statistics and found that pregnant and reproductive-age women share similar demographic and socioeconomic characteristics (Kozhimannil et al., 2012, pg.137). Approximately 1 in 4 women of childbearing age reported being uninsured at some point in the past 12 months (Kozhimannil et al., 2012, pg.139). Whereas pregnant women were more likely to be insured and chances of being insured by Medicaid increased 3% annually (Kozhimannil et al., 2012, pg.138). Controlling for sociodemographic and health variables, the chances that a reproductive-age woman had been uninsured increased by approximately 1.5% annually and did not differ between pregnant and non-pregnant women (Kozhimannil et al., 2012, pg.138). Overall, pregnant and non-pregnant women saw declines in private health insurance coverage (Kozhimannil et al., 2012, pg. 137). Hence, their study paves a platform for my study to analyze health insurance coverage for women at an important stage of their lives.

Since the study by Kozhimannil et al. (2012), the Affordable Care Act was passed in 2010 and fully implemented in 2014. The Affordable Care Act (ACA) expanded coverage to low-income families and expanded Medicaid. The ACA was enacted in March 2010 and had three primary goals (Healthcare, 2018, pg.1). The first goal was to make affordable health insurance available to more people by providing consumers with subsidies that lower costs for households with income between 100% and 400% of the federal poverty level (Healthcare, 2018, pg.1). In addition, states were offered an expansion of the Medicaid program to cover all adults with income below 138% of the federal poverty level (Healthcare, 2018, pg.1). The final goal was to support

innovative medical care delivery methods designed to lower the costs of healthcare (Healthcare, 2018, pg.1). One of the most important parts of the ACA was the individual mandate that required citizens and legal residents to have health insurance (Kaiser Family Foundation, 2013, pg.1). Employers were also required to provide insurance for all their employees based on the number of people working for the company. In all states, an individual can qualify for Medicaid based on income, household size, disability, family status, and other factors (Kaiser Family Foundation, 2013, pg.2). However, in states with the Medicaid expansion, an individual can qualify for Medicaid based on income alone and expanded the coverage to non-Medicare eligible individuals under the age 65 (Kaiser Family Foundation, 2013, pg.2). If the person's household income is below 133% of the federal poverty level, he or she can qualify for Medicaid (Kaiser Family Foundation, 2013, pg.2).

In addition, the ACA had a section that mandated maternity insurance coverage and expanded preventative coverage for women's health and well-being. Under the maternity coverage, pregnancy, labor, and delivery are mandatory to be covered by all individual insurance plans (Healthcare 2016). Outpatient services such as prenatal and postnatal doctor visits, gestational diabetes screenings, and medications are part of the coverage (Healthcare 2016). Along with inpatient services such as hospitalization and physician fees (Healthcare 2016).

Preventive services that have strong scientific evidence of their health benefits must be covered, and plans can no longer charge a patient a copayment, coinsurance or deductible (Health Resources and Services Administration 2016). Under the ACA, women's preventive health care such as mammograms, screenings for cervical cancer,

prenatal care, and other services generally must be covered with no cost sharing (Health Resources and Services Administration 2016). Other services such as birth controls were also mandated to be covered. FDA-approved contraceptive methods such as barrier methods and hormonal methods must be covered (Healthcare 2018).

Following Kozhimannil et al.'s (2012) study design, this study analyzes health insurance coverage changes after implementation of the ACA. All the data and regression analysis were carefully replicated to produce my results between pregnant and non-pregnant, reproductive-age women. In my paper, I will be focusing on the ACA and how trends in health insurance coverage changed during the implementation period.

Hypotheses

Since women qualify for Medicaid coverage when they become pregnant, I would expect that pregnant women would be covered at a higher rate than non-pregnant women. Similarly, pregnant women would be more likely to have Medicaid coverage than non-pregnant women while non-pregnant women would be more likely to have private health insurance than pregnant women.

With the passage of the ACA, I hypothesize that the number of uninsured women has declined. The mandate requires people to sign up for a health insurance plan or be penalized on their taxes. Both the expansion of Medicaid and provision for young adults (18 to 26-year-old) to be on their parent's insurance would ensure that these populations can receive coverage. The implementation of the ACA did not affect Medicaid eligibility for pregnant women so I do not hypothesize a change in Medicaid coverage over time for pregnant women, but given Medicaid expansions and the

dependent care coverage mandate, I would expect that coverage for nonpregnant women would increase more than for pregnant women.

Given that ethnic minorities have been found to have lower insurance rates than non-Latino whites generally (Brown et al., 2000, pg.9), I expect that pregnant and non-pregnant ethnic minority women are also less likely to be insured than non-Hispanic white women.

Methods

Data and Study Population

The study population was drawn from the National Health Interview Surveys (NHIS). These cross-sectional surveys are conducted annually by the Center for Disease Control (CDC) among a population-based, representative sample of noninstitutionalized Americans. Data from NHIS has been used in health services research to document trends in health behaviors and health-related questions. There are about 45,000 households sampled per year. One person from each family participates in an in-person interview about the health of the family. Afterward, one sample adult and one sample child may be selected to complete an additional interview. I analyzed survey responses from the 2009 through the 2016 interviews of all female participants ages 18 to 49 (n= 175,707) including those who reported being pregnant (n= 2,489) at the time of the survey.

Insurance Coverage Measures

The dependent variable is the status of health care coverage. Specifically, I examine whether the person had been uninsured at some point in the prior year and if

so, whether the coverage was through Medicaid. I also show descriptive statistics on whether women had private coverage and whether their employer offered insurance.

Characteristics of Pregnant and non-Pregnant Women

Race and ethnicity was captured with three indicator variables, non-Hispanic black, non-Hispanic other (Asian, American Indian and Alaskan Native, and Multiple), and Hispanic. Non-Hispanic white is the reference group. Education was categorized into “high school or equivalent”, “some college”, “college graduate”, and “graduate and professional”. Less than high school is the reference group. Employment is captured by an indicator for whether the person worked in the past week. There are four regions that the data is divided into: North Central, North East, South, and West. I treat North East as the reference group. Marital status is captured by an indicator for currently married, where the reference group includes single, widowed, separated, or divorced. I also include an indicator for whether the household had income below the federal poverty level. I also include an indicator for whether the person reported being a U.S. citizen. Family size was included using an indicator for whether the family include 4 or more household members regardless of age. Finally, self-reported health status was categorized as “poor or fair”, where the reference group includes those in good, very good, or excellent health.

Statistical Analysis

Descriptive statistics were used to characterize the study population separately for pregnant and non-pregnant women. Statistical tests were conducted to compare means across pregnant status using chi-square tests. Graphs of the trends in

insurance coverage over time are also shown separately for pregnant and non-pregnant women.

Logistic regression models were run to examine the characteristics of women that are associated with insurance coverage for this sample. Models were estimated separately for pregnant and non-pregnant women. Sampling weights were used in the regression analysis to reflect the survey methodology and adjust for pooling of seven years of data.

Results

Of the pregnant women in this study, 10% reported currently being uninsured, whereas 36% and 47% reported Medicaid coverage or private health insurance, respectively (Table 1). Nearly 65% were offered health insurance coverage at work. On average, about 17% of pregnant women in this study were uninsured at some point in the prior year. In contrast, only 6% of non-pregnant American women were uninsured in the past year. Among 18-to-49-year-old women who were not pregnant, 20% had no health insurance, 15% had Medicaid coverage, and 59% had private coverage. Approximately 64% received an offer of health insurance from their employer.

Demographic and socioeconomic characteristics were generally different across pregnant and non-pregnant women. Pregnant women were, on average, younger, more likely to be Hispanic, have smaller families, more likely to be married, and less likely to be working than women who were not pregnant.

Table 1. Descriptive Statistics for U.S. Women (Aged 18 – 49), 2009 to 2016.

	Pregnancy Status				
	Not Pregnant (n= 173,218)		Pregnant (n=2,489)		
	N	%	N	%	p-value
Outcomes - health insurance status					
Ever uninsured (in the past year)	4,662	6	418	17	0.000

Currently uninsured	14,335	20	250	10	0.000
Currently insured through Medicaid	10,768	15	890	36	0.000
Currently privately insured	41,750	59	1,178	47	0.000
Currently offered insurance at work	30,914	64	873	65	0.000
Age					
18-24	12,449	18	656	26	0.000
25-29	11,550	16	779	31	
30-34	12,187	17	660	27	
35-49	34,500	49	394	16	
Ethnicity					
Hispanic	15,645	22	663	27	0.000
Non-Hispanic	55,041	78	1,826	73	
Race					
White, non-Hispanic	36,800	67	1,196	66	0.364
Black, non-Hispanic	11,556	21	399	22	
Asian, non-Hispanic	4,674	9	166	9	
American Indian/Native Alaskan, non-Hispanic	527	1	23	1	
Multiple Races, non-Hispanic	1,328	2	38	2	
Family Size					
≥4 Person family	25,779	36	816	33	0.000
<4 Person family	44,907	64	1,673	67	
Marital Status					
Married	32,645	46	1,594	64	0.000
Single	37,890	54	893	36	
Work Status					
Working	48,610	69	1,350	54	0.000
Not working	22,033	32	1,139	46	
Citizenship Status					
U.S. Citizen	61,591	87	2,047	82	0.000
Not U.S. citizen	8,965	13	441	18	
Education					
Less than high school	7,782	11	358	15	0.000
High school	15,051	22	557	23	
Some college	24,599	36	778	32	
College	14,395	21	466	19	
Graduate and beyond	7,211	10	258	11	
Health Status					
Excellent	22,709	32	974	39	0.000
Very good	23,446	33	834	34	
Good	17,759	25	543	22	
Poor or bad health	6,746	10	136	5	
Poverty Level					
Family income above federal poverty level	50,909	76	1,752	74	0.043
Family income below federal poverty level	16,033	24	608	26	
Region					
Northeast	10,947	15	331	13	0.019
North Central	14,804	21	536	22	
South	26,012	37	918	37	
West	18,923	27	704	28	

Figure 1 shows the trends in insurance coverage for pregnant (left panel) and non-pregnant (right panel) women from 2009 to 2016. The percentage of pregnant and non-pregnant women who reported having private insurance increases dramatically after 2012. Likewise, both pregnant and non-pregnant women saw a decrease in rates of uninsurance starting in 2012. In contrast, pregnant women were less likely to be covered by Medicaid after 2012 while non-pregnant women were more likely to be covered by Medicaid over time. Across all years, both pregnant and non-pregnant are most likely to be covered by private insurance, followed by Medicaid. However, non-pregnant women have higher private insurance rates than pregnant women, and pregnant women have higher rates of Medicaid coverage than non-pregnant women. The rates of uninsurance are lower for pregnant women in all years, but are converging over time.

Figure 2 shows pregnant women reported a higher percentage of being uninsured in the past year as compared to reproductive age women. Over time, non-pregnant women's trend being uninsured in the past year is more steady than for pregnant women. Between the years 2011 to 2014, pregnant women being uninsured in the past year fluctuates then declines after 2014. Over this time period, both pregnant and non-pregnant women being uninsured in the past year declines steadily.

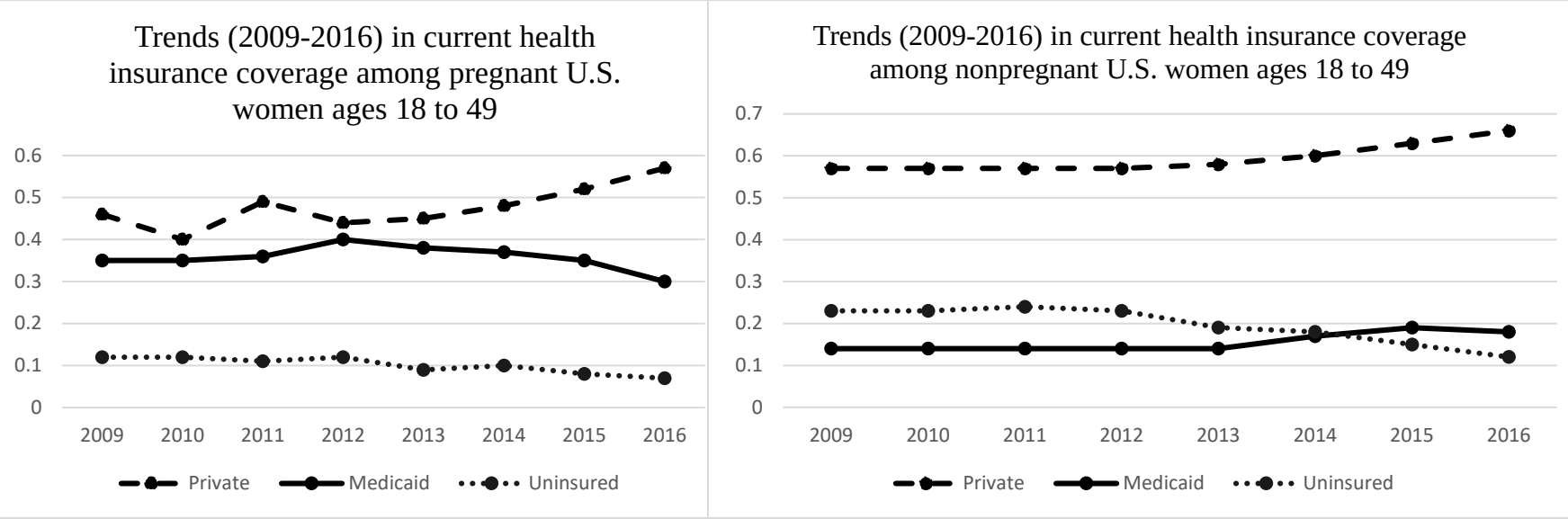

Figure 1 Trends (2009-2016) in current health insurance coverage among pregnant and non-pregnant U.S. women ages 18 to 49

	2009	2010	2011	2012	2013	2014	2015	2016	%change
Pregnant									
Private	46%	40%	49%	44%	45%	48%	52%	57%	24%
Medicaid	35%	35%	36%	40%	38%	37%	35%	30%	-14%
Uninsured	12%	12%	11%	12%	9%	10%	8%	7%	-42%
Not Pregnant									
Private	57%	57%	57%	57%	58%	60%	63%	66%	16%
Medicaid	14%	14%	14%	14%	14%	17%	19%	18%	23%
Uninsured	23%	23%	24%	23%	19%	18%	15%	12%	-48%

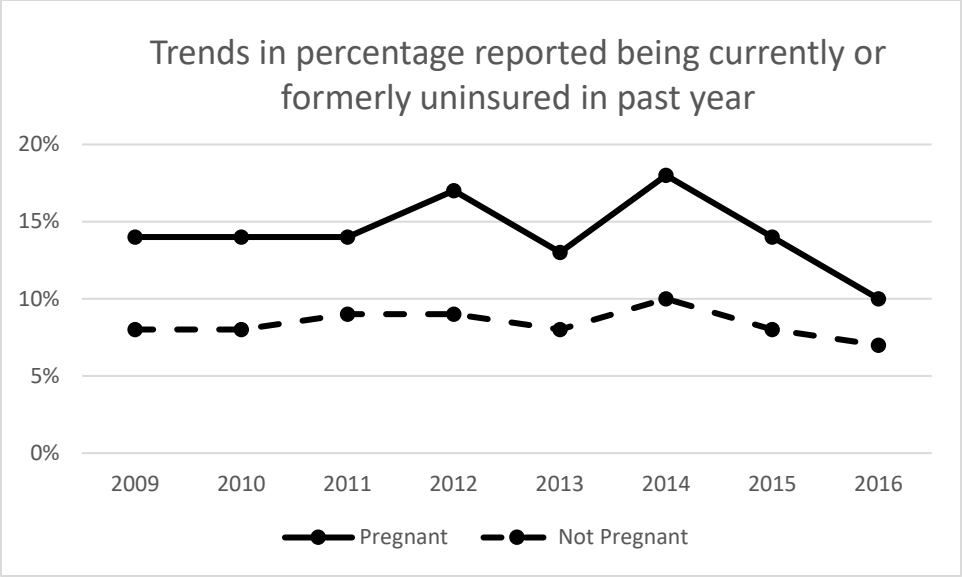

Figure 2 Trends (2009-2016) in the percentage of U.S. women ages (18-49) who reported being currently pregnant or formerly uninsured in the past year, stratified by pregnancy status.

	2009	2010	2011	2012	2013	2014	2015	2016	%change
Pregnant	14%	14%	14%	17%	13%	18%	14%	10%	-29%
Not Pregnant	8%	8%	9%	9%	8%	10%	8%	7%	-13%

Tables 2 and 3 present results from regression models estimating current health insurance status among pregnant women and non-pregnant women, respectively. Odds ratios are reported. The results indicated that the odds that a non-pregnant woman was uninsured decreases with each year. The odds that a non-pregnant women is on Medicaid increased 13% over this time period. The results indicated that as a woman ages, the likelihood she would be uninsured increases. Other factors that increased the likelihood of uninsurance are being Hispanic, living in the North Central region, the South, and the West (relative to the North East), and living below the federal poverty level. Factors that reduced the odds of uninsurance included being married, working, and having an education greater than less than high school.

Among the pregnant women were on Medicaid, they were more likely to be Black (non-Hispanic), Other (non-Hispanic), being Hispanic, U.S. citizen, having a family size greater than four, having poor or fair health, and having a family income level below the poverty level. As for non-pregnant women on Medicaid, all regions (relative to the North East) were all at least 40% less likely to be on Medicaid. However, this was a higher percentage for women in the South (about 65%) (see Table 2).

The results indicated that the odds that a pregnant woman was uninsured is unchanged over time. The data indicated that for pregnant women, those living in the South (relative to the North East) and had lower levels of education were more likely to be on Medicaid when pregnant. Factors that indicated a higher likelihood of having health insurance among pregnant women included married, higher levels of education, working, and living above the federal poverty level.

Table 2. Results from Logistic Regression Models for Current Health Insurance Status among non-Pregnant Women from 2009 to 2016.

Non-Pregnant Women				Currently Covered by Medicaid			
	Currently Uninsured			(Conditional on Having Insurance; n= 10,768)			
	OR	95% CI		OR	95% CI		
Trends over time (annual)							
Year (2009-2016)	0.88895	0.87674	0.90133*	1.132	1.11281	1.151523*	
Demographic characteristics							
Age (in years)	1.01399	0.98731	1.04139*	1.05017	1.01519	1.086348*	
Black, NH (vs.White, NH)	1.03211	0.94364	1.128872*	2.17162	1.96726	2.397215*	
Other, NH(vs. White, NH)	1.02758	0.9206	1.146983*	1.19603	1.04946	1.363069*	
Hispanic (vs. Non-Hispanic)	1.73642	1.60515	1.87842*	1.37596	1.23548	1.532415*	
Family of ≥ 4	0.92147	0.86486	0.981783*	1.58787	1.46186	1.72474*	
Married (vs. not married)	0.70665	0.66102	0.75543*	0.4651	0.42683	0.506807*	
Working (vs. not working)	0.79394	0.74263	0.848791*	0.39931	0.36978	0.431199*	
U.S. Citizen	0.30854	0.28277	0.336671*	2.50718	2.17413	2.891248*	
High School (vs. less than high school)	0.67821	0.61959	0.742374*	0.5951	0.53765	0.658697*	
College (vs. less than high school)	0.26611	0.2356	0.300559*	0.17702	0.14984	0.209122*	
Graduate (vs. less than high school)	0.1485	0.12132	0.181786*	0.08545	0.06359	0.114805*	
North Central (vs. North East)	1.39891	1.25103	1.564261*	0.65771	0.57936	0.746646*	
South (vs. North East)	2.35663	2.1446	2.589622*	0.35015	0.31213	0.392787*	
West (vs. North East)	1.55062	1.39426	1.724514*	0.67491	0.58991	0.772162*	
Self-reported fair or poor health	0.96665	0.88498	1.055866	2.11956	1.94267	2.312555*	
Family income less than the federal poverty level	1.52411	1.41104	1.646245*	4.25481	3.89464	4.648293*	

*=Statistical significance (p<.05)

Among pregnant women with insurance, the odds of being currently insured by Medicaid increased by 7% per year over the study period (p<.05). Younger, unmarried women, those who were not working, and family income less than the federal poverty level were more likely to have Medicaid coverage during their pregnancy.

Women who were not pregnant had some access to employer-sponsored health insurance, either through their job or a spouse. However, the data for an individual's receiving coverage through their spouse is not available. The availability of employer-based health insurance for reproductive-age women slowly increased and then decreased again. A lower percentage of pregnant women reported being currently

working (54% vs. 69% non-pregnant women). Hence, fewer pregnant women had insurance through their employer.

Table 3. Results from Logistic Regression Models for Current Health Insurance Status among Pregnant, Reproductive-Age Women from 2009 to 2016.

Pregnant Women				Currently Covered by Medicaid			
	Currently Uninsured			(Conditional on Having Insurance; n= 890)			
	OR	95% CI		OR	95% CI		
Trends over time (annual)							
Year (2009-2016)	0.9374	0.85868	1.023338	1.06427	1.00503	1.12701*	
Demographic characteristics							
Age (in years)	1.13552	0.95432	1.351134	0.61393	0.53518	0.7042642	
Black, NH (vs.White, NH)	0.75416	0.38921	1.461314	2.46279	1.65746	3.659399*	
Other, NH(vs. White, NH)	1.06989	0.50408	2.270796	1.2039	0.69291	2.091735	
Hispanic (vs. Non-Hispanic)	1.58228	0.93129	2.688338	1.14087	0.7923	1.642779	
Family of ≥ 4	1.19903	0.80819	1.778872	1.39075	1.01054	1.914012	
Married (vs. not married)	0.73457	0.48084	1.122182	0.43452	0.32694	0.577513*	
Working (vs. not working)	0.70485	0.45221	1.09863	0.37301	0.28248	0.492568*	
U.S. Citizen	0.20987	0.13591	0.324062*	1.64424	0.9706	2.785413	
High School (vs. less than high school)	0.69676	0.43008	1.12882	0.86639	0.56436	1.330074	
College (vs. less than high school)	0.47126	0.22106	1.004645	0.17789	0.0982	0.322237*	
Graduate (vs. less than high school)	0.05306	0.01054	0.26704*	0.24451	0.11581	0.516261*	
North Central (vs. North East)	2.01481	0.78961	5.141085	0.56537	0.34054	0.9386291	
South (vs. North East)	3.32306	1.49885	7.367474*	0.83738	0.5327	1.316317	
West (vs. North East)	1.56537	0.68599	3.57204	0.86027	0.52606	1.406805	
Self-reported fair or poor health	1.29662	0.6362	2.642567	1.01237	0.53703	1.908448	
Family income less than the federal poverty level	1.06486	0.71553	1.584733*	3.01457	2.14264	4.24132*	

*=Statistical significance (p<.05)

As for region comparison, non-pregnant women living in the South were about 138% more likely to not be covered (relative to the North East) (Table 2). Non-pregnant women living in the North Central (Midwest) where 38% more likely to not be covered (relative to the North East) (Table 2). Women living in the West were about 54% more likely to not be covered (relative to the North East) (Table 3).

Discussion

As hypothesized, pregnant women had a lower rate of uninsurance, a lower rate of private insurance, and a higher rate of Medicaid coverage than non-pregnant women given that Medicaid covers pregnant women throughout this period (Figure 1). The rates of uninsurance declined starting in 2012, as the ACA was being implemented. The rates of Medicaid coverage for pregnant women did not significantly change over this period (Table 3) given that ACA did not affect pregnant women's eligibility for Medicaid. However, non-pregnant women's Medicaid coverage significantly increased over time, which is likely due to Medicaid expansions in many states as the ACA was implemented.

Both pregnant and non-pregnant women saw increased rates of private coverage which may be explained by the dependent care coverage mandate and the mandate that all plans cover maternal services. These findings are consistent with Sommers et al. (2013), who find that the ACA led to significant gains in health insurance for young adults (pg.165). By allowing young adults to stay on their parent's health insurance, Sommers et al (2013) find that as many as three million young adults gained coverage. The largest gain was seen in unmarried adults, non-students, and men.

The finding that the odds of uninsurance was higher in all regions compared to the North East is consistent with the fact that the North East included more states that expanded Medicaid under the ACA than the other regions (see Figure 3). The Southern states were the least likely to expand Medicaid, followed by the North Central states,

and the Western states. This pattern is consistent with the finding that the odds of uninsurance are highest in the South.

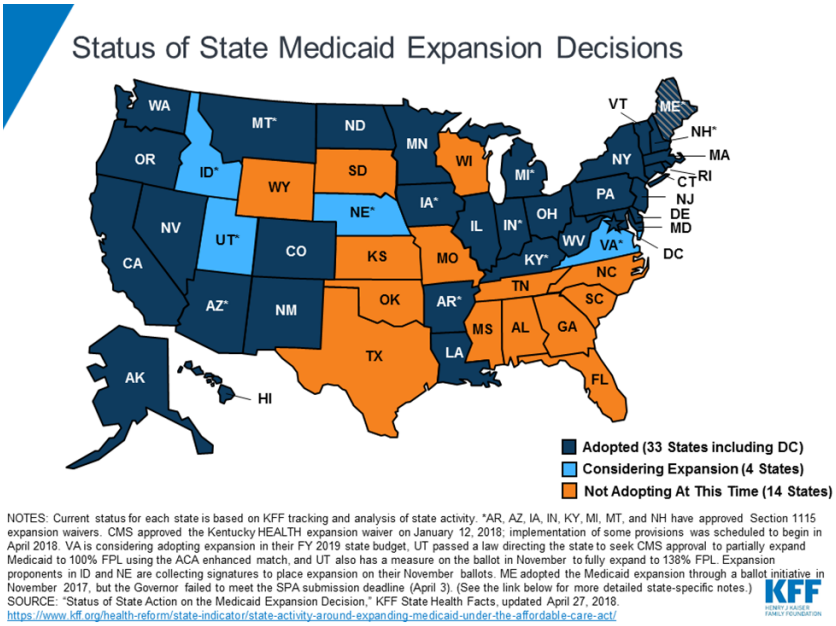

Figure 3 States who took the Medicaid expansion part of the Affordable Care Act, diagram from the Kaiser Family Foundation (2018)

Policy Implications

After analyzing the data, I would recommend the states that did not take the Medicaid expansion under the ACA to implement the Medicaid expansion. In the regions that did not have the full Medicaid expansion, more women were likely to be uninsured as compared to states that took the full expansion. The results show that women living in states that did not take the Medicaid expansion were more likely to be uninsured over this time period. In the regions that had taken the Medicaid expansion, we see that more women are insured through private insurance and a rise in Medicaid enrollment among reproductive age, non-pregnant women. Most states cover up to 133% of the federal poverty level while other states cover up to 300%. In the states the cover up to 300% of the federal poverty level, we see more non-pregnant women being

covered through Medicaid. Young, non-pregnant women who do not have children are more likely to not have health insurance coverage. Therefore, it would be crucial for these states to accept the expansion that would allow young women to gain coverage and access health services needed for their reproductive care.

Limitations

My study is subject to certain limitations. Even though the data shows that younger people can gain coverage, the utilization of these services for preconception care is not known. The data also does not collect information on whether an individual receives health insurance through a spouse. The use of prenatal care and maternity-related services for pregnant women is not known. It would be beneficial to have information on whether pregnant women used preconception care and how this compares to their pregnancy. The findings show that women gained coverage mainly from Medicaid or private health insurance.

This study does not analyze whether Medicaid or private health insurance had better coverage. Since the ACA mandated maternal coverage and services, this could be a motivating factor for women to stay on their current healthcare plan. Moreover, the survey does not collect information on immigration status. There is various immigration status depending on the person's application into the United States. Even when someone enters the country legally, the path to citizenship can take a long time. Though the survey asks whether a person is a citizen or not, this does not reveal their current immigration status. Furthermore, birthing rates have been decreasing which can explain the decline in Medicaid coverage. In addition, the economic recession can be a motivating factor for women to not have children. Despite these limitations, the study

uses the NHIS which is a nationally represented health survey with a large sample size that allows us to understand the trends in health care coverage among reproductive-age women.

Concluding Remarks

Preconception care for reproductive-age women, regardless of her pregnancy status, is vital to her health and the health of future generations. Although expecting mothers should use prenatal services, intervention at this stage is too late. Reproductive services such as birth control and STI testing can help women plan their families better. Preventative services such as pap tests and domestic screening and counseling are all services that. However, accessing these services requires health insurance coverage that mandates such services to be covered under the individual's plan. Hence, health care coverage is an important resource for gaining access to utilizing these services. Whether women decide to have children, reproductive services can help maintain the lifestyle they desire.

By providing these services, women can time their pregnancies in an ideal situation. When studying women's health care insurance coverage, analyzing socio-demographic characteristics should be implemented in the study. Systematic racism and structural violence also affect the experience of individuals even when they have insurance. Preconception care is crucial for the health and well-being of young women. Implementation of preventative services and health education at no costs to vulnerable adults at this age is crucial to help them in the future.

In this study, the sample had a small sample of Asian, AI/AN, and Multiple race categories. Brown et al. (2000) found that Southeast Asian minorities differed from

Chinese, Korean, and Japanese when it came to coverage and health. These groups should be analyzed separately to determine differences among minority populations. In addition, AI/AN tend to gain coverage from the Indian Health Service (IHS) (Kunitz 1996). More than three-fourths of the American Indian and Alaska Native population resides in rural and urban areas outside of reservations or off-reservation trust lands (Wame 2014). Thus, only American Indians who live on large reservations can easily gain coverage from IHS. Future studies should study Asians in sub-populations and find more ways to integrate the AI/AN community.

This study suggests that the Affordable Care Act expanded coverage for non-pregnant women. The Medicaid expansion allowed non-pregnant women to gain coverage and young adults were covered by the dependent mandate. Pregnant women were still on Medicaid, however, more pregnant women are now on private insurance. Although more women are able to gain coverage through the Medicaid expansion, there are still some issues. Racial and ethnic minorities are overwhelmingly insured through Medicaid yet are more likely to report fair or poor health and live below the federal poverty level. This suggests that coverage may not be enough to close health disparity gaps.

Figure 2 shows that pregnant women had a higher rate of being uninsured in the prior year. This suggests that after becoming pregnant, they were able to obtain coverage through Medicaid. Further research needs to be done in order to understand this pattern since the Kozhimmannil et al. (2012) did not see the same pattern. I hypothesize that this may be a large portion of women in the South who were not insured then became insured through Medicaid. Since states did not fully ACA until

2014, this could be another reason we see this fluctuation. Furthermore, the ACA provides important policies for reproductive healthcare.

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